

PARAMETER TITLE: Source Specific Encapsulated Microbial Density $(d_V^i(0))$

VALUE	
UPPER	
ACCEPTABLE	See Below
LOWER	

APPLICATION	
MISSION	All
CATEGORY	III, IV
PLANET	All

PARAMETER DEFINITION: The average number of spores buried inside the i th subassembly or component of a spacecraft. The number can be expressed in terms of volume or area according to the application as specified below.

APPLICABLE SOURCE: Non-metallic materials on the spacecraft.

CONSTRAINTS: Source-specific density values can be used only if applied to the entire volume of spacecraft non-metallic material without resorting to the average density value, $d_V(0)$, for any portion thereof. Values for this parameter must be derived for all applicable sources. Values are selected from the following categories and ranges depending upon the composition of, and manufacturing process for, each designated source:

Encapsulated Organisms in:	$d_V^i(0)$
Electronic piece parts	3-150/cm ³
Other non-metallic materials	1-30/cm ³
Enclosed surface densities:	
Clean room-highly controlled	0.05-0.5cm ²
Clean room-normal control	0.5-10/cm ²
Uncontrolled manufacturing	10-100/cm ²

In the use of this parameter a rationale shall be presented for the selection of values less than the maximum of the applicable range specified. This value was derived assuming the subsequent use of heat sterilization. If processes are proposed that do not include heat for a Category IV mission, the value must be reassessed to assure its applicability for the proposed usage. It may be used without restriction for Category III mission burden estimates.

REFERENCES: PQAP Review, September 28, 1971, Denver, Colorado.

Planetary Protection Officer

Date